

Mechanical Gun Release Full Bore Shift Up

TC-062-2375-XXX
TC-062-2875-XXX
TC-062-3500-XXX

MAN-TC-062 (R11)

OWEN OIL TOOLS

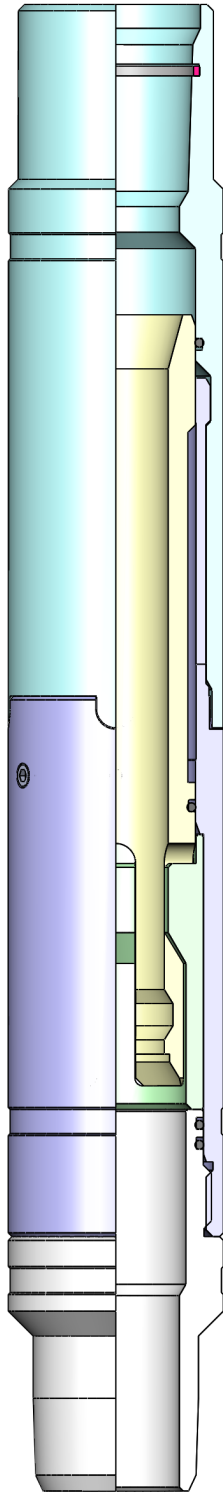
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DESCRIPTION:

The Mechanical Gun Release, Full Bore Shift Up is designed as a heavy duty separation tool for use in TCP operations where it is desirable to drop the discharged gun system. The guns may be released using a standard Model B Shifting Tool with selective keys (self releasing). After the guns have been released, the Top Sub provides a well tapered re-entry guide. The Shifting Sleeve bore size does not affect the minimum ID because the sleeve falls with the guns. All parts are contained together, simplifying future fishing operations.

After the guns have been detonated and it is desired to drop them, the Model B Shifting Tool is positioned below the Shifting Sleeve with the wireline bottom hole assembly configured to jar up. When jarring up, the shear screws break and allow the Shifting Sleeve to move upward. This allows the Collet Fingers of the Collet Sub to collapse inward and the guns to drop to the bottom. As the guns are falling, the keys of the shifting tool are squeezed and released from the bottom of the Shifting Sleeve. The only component remaining on the tubing is the Top Sub.

ADVANTAGES:

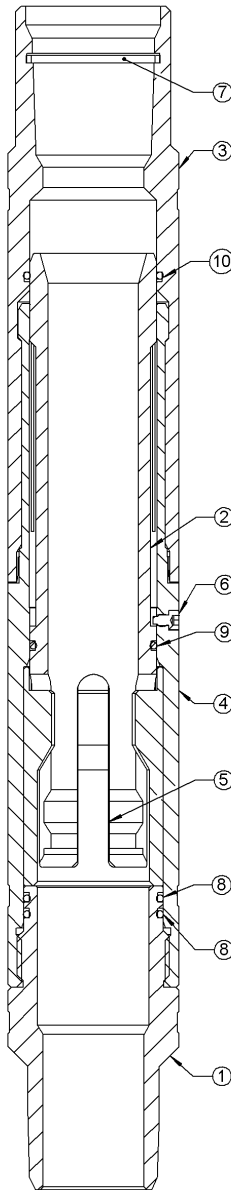
- Full tubing bore once guns are released eliminates the restriction of the Shifting Sleeve in conventional Shift Up Gun Releases
- Has the safety feature inherent with the Shift Up where the Drop Bar will not hit the Shifting Sleeve on the way down and release the gun prematurely
- The tool is fully sealed which allows pressure testing of the tubing string prior to shifting and also prevents fines from plugging the release mechanism
- The Top Sub acts as a wireline re-entry guide after the guns have been released
- The Shifting Sleeve may be engaged with the Model B Shifting Tool with Selective Keys
- Strong durable design with pressure ratings exceeding or near tubing ratings
- Integral torque tabs provide the ability to rotate the tubing string

SPECIFICATIONS:

	2-3/8 IN (60.3 MM)		2-7/8 IN (73.0 MM)		3-1/2 IN (88.9 MM)	
MAXIMUM OD	3.375 in	85.7 mm	3.668 in	93.2 mm	4.500 in	114.3 mm
MINIMUM ID	1.995 in	50.7 mm	2.441 in	62.0 mm	2.750 in	69.9 mm
OVERALL LENGTH	23.0 in	584 mm	23.0 in	584 mm	24.75 in	629 mm
MAX PRESSURE ¹	see table on next page					
MAX LOAD @ RELEASE	30,000 lbs	13 350 daN	30,000 lbs	13 350 daN	30,000 lbs	13 350 daN
TENSILE	97,850 lbs	43 520 daN	102,550 lbs	45 615 daN	143,450 lbs	63 805 daN
MAX. TORQUE (P 110)	2930 ft-lb	3970 N.m.	3820 ft-lb	5175 N.m.	4100 ft-lb	5555 N.m.
MAX. TORQUE (L80)	2130 ft-lb	2885 N.m.	2350 ft-lb	3190 N.m.	2995 ft-lb	4065 N.m.
MIN WEIGHT TO RELEASE	150 lbs (68 kg)					
MAX TEMP ²	250oF (121°C)					
SCREW SHEAR FORCE	1500 lbf - 2000 lbf per screw					
CONNECTIONS	2-3/8 in (60.3 mm) EU Box X Pin		2-7/8 in (73.0 mm) EU Box X Pin		3-1/2 in (88.9 mm) EU Box X Pin	
PRODUCT NUMBER ¹	TC-062-2375-XXX		TC-062-2875-XXX		TC-062-3500-XXX	
REDRESS KIT	TC-062-2375-099		TC-062-2875-099		TC-062-3500-099	

¹Sour Service (L80) versions available with an L80 Extension (TC-061-2375-187-L80)

²Maximum temperature can be increased to 450°F (230oC) by substituting the 90 durometer Nitrile O-Rings with 90 durometer Viton O-Rings



BILL OF MATERIALS:

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-2375-	--	Mechanical Gun Release, Full Bore Shift Up 2-3/8" EU
1	TC-062-0002-000	1	Bottom Sub 2-3/8" EU
2	TC-062-0003-187	1	Shifting Sleeve 1.875" ID 2-3/8" FBSU
2	TC-062-0003-178	1	Shifting Sleeve 1.781" ID 2-3/8" FBSU
2	TC-062-0003-164	1	Shifting Sleeve 1.645" ID 2-3/8" FBSU
3	TC-062-0000-110	1	Top Sub 2-3/8" EU
4	TC-062-0001-000	1	Collet Sub
5	TC-062-0004-187	1	Release Cage 1.875" ID 2-3/8" FBSU
5	TC-062-0004-178	1	Release Cage 1.781" ID 2-3/8" FBSU
5	TC-062-0004-164	1	Release Cage 1.645" ID 2-3/8" FBSU
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
8,10	OOO-N569-230	3	O-Ring 90 Durometer Nitrile
9	OOO-N569-228	1	O-Ring 90 Durometer Nitrile
--	MAN-TC-062	--	Assembly Manual
--	TC-062-2375-099	--	Redress Kit 2-3/8" EU, Full Bore

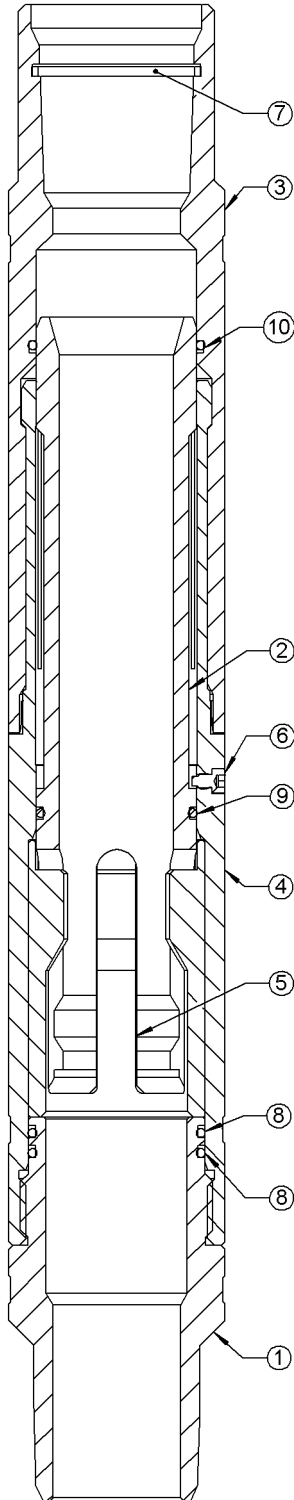
ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-2875-	--	Mechanical Gun Release, Full Bore Shift Up 2-7/8" EU
1	TC-062-0007-000	1	Bottom Sub 2-7/8" EU
2	TC-062-0008-231	1	Shifting Sleeve 2.310" ID 2-7/8" FBSU
2	TC-062-0008-225	1	Shifting Sleeve 2.250" ID 2-7/8" FBSU
3	TC-062-0005-110	1	Top Sub 2-7/8" EU
4	TC-062-0006-000	1	Collet Sub 2-7/8" EU
5	TC-062-0009-231	1	Release Cage 2.310" ID 2-7/8" FBSU
5	TC-062-0009-225	1	Release Cage 2.250" ID 2-7/8" FBSU
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
8	OOO-N569-233	2	O-Ring 90 Durometer Nitrile
9	OOO-N569-230	1	O-Ring 90 Durometer Nitrile
10	OOO-N569-232	1	O-Ring 90 Durometer Nitrile
--	MAN-TC-062	--	Assembly Manual
--	TC-062-2875-099	--	Redress Kit 2-7/8" EU, Full Bore

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-3500-	--	Mechanical Gun Release Full Bore Shift Up 3-1/2" EU
1	TC-062-0015-000	1	Bottom Sub 3-1/2" EU
2	TC-062-0017-275	1	Shifting Sleeve 2.750" OD
3	TC-062-0014-000	1	Top Sub 3-1/2" EU
4	TC-062-0016-000	1	Collet Sub
5	TC-062-0018-275	1	Release Cage 2.750" OD
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-3500-000	1	Seal Ring 3-1/2" EU
8	OOO-N569-239	2	O-Ring 90 Durometer Nitrile
9	OOO-N569-236	1	O-Ring 90 Durometer Nitrile
10	OOO-N569-238	1	O-Ring 90 Durometer Nitrile
--	MAN-TC-062	--	Assembly Manual
--	TC-062-3500-099	--	Redress Kit 3 1/2" EU, Full Bore

SPECIFICATIONS:

SHIFTING SLEEVE BORE		PRESSURE RATING	
2-3/8 in (60.3 mm)			
1.645 in	41.78 mm	15,000 psi	113 760 kPa
1.781 in	45.23 mm	15,000 psi	113 760 kPa
1.875 in	47.62 mm	15,000 psi	113 760 kPa
2-7/8 in (73.0 mm)			
2.250 in	57.15 mm	10,000 psi	71 360 kPa
2.310 in	58.67 mm	10,000 psi	71 360 kPa
3-1/2 in (88.9 mm)			
2.750 in	69.85 mm	12,000 psi	103 420 kPa

BILL OF MATERIALS:

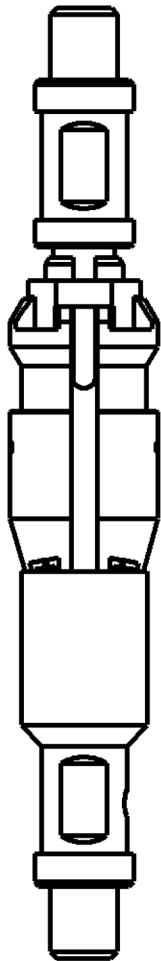


ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-2375-099	--	Redress Kit 2-3/8" EU, Full Bore
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
9	OOO-N569-228	1	O-Ring 90 Durometer Nitrile
8,10	OOO-N569-230	3	O-Ring 90 Durometer Nitrile

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-2875-099	--	Redress Kit 2-7/8" EU, Full Bore
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
8	OOO-N569-233	2	O-Ring 90 Durometer Nitrile
9	OOO-N569-230	1	O-Ring 90 Durometer Nitrile
10	OOO-N569-232	1	O-Ring 90 Durometer Nitrile

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-062-3500-099	--	Redress Kit 3-1/2" EU, Full Bore
6	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 Lg.
7	MI-305-3500-000	1	3-1/2" EU Thread API Seal Ring
8	OOO-N569-239	2	O-Ring 90 Durometer Nitrile
9	OOO-N569-236	1	O-Ring 90 Durometer Nitrile
10	OOO-N569-238	1	O-Ring 90 Durometer Nitrile

The Mechanical Gun Release Full Bore Shift Up is designed for use with the Model B Shifting Tool when dressed with Selective (Self Releasing) Keys.



Note: *If the Shifting Tool is not dressed with Self Releasing Keys, the Gun Release may not function properly. Only Selective Keys must be used.*

Operation

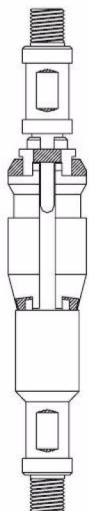
To engage the Shifting Sleeve of the Mechanical Gun Release, run the Shifting Tool past the Gun Release and pull up slowly. The self releasing keys will open into the sleeve profile as the shoulder of the keys engages the Shifting Sleeve. Several jars will be required to shear the shear pins allowing the sleeve to shift. As the sleeve is shifted, the Self Releasing Keys are suppressed, allowing the Shifting Tool to be retrieved and the guns to fall into the sump.

Shifting Tool String

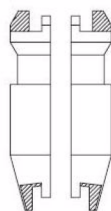
In order to maximize the effectiveness of the Shifting Tool, a typical string would be as follows:

- Cablehead
- Sinker Bar
- Knuckle Joint
- Hydraulic Jar (if available)
- Spang (or tube) jar
- Model B Shifting Tool

**Model 'B' Shifting Tool
(Selective Keys)**



**Selective Keys
Set**

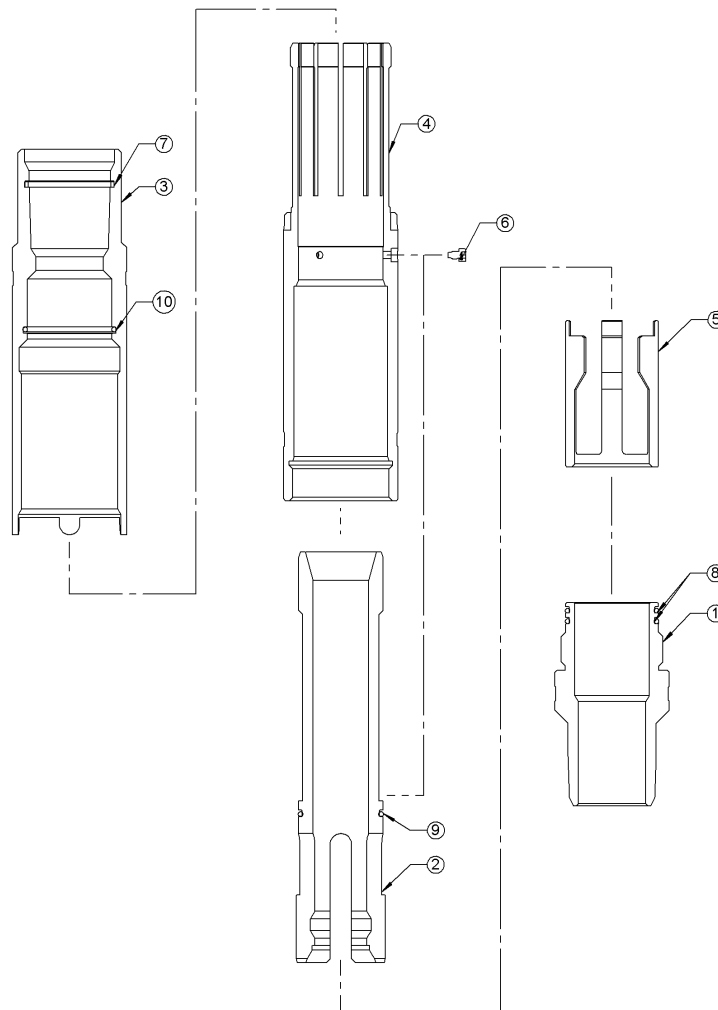


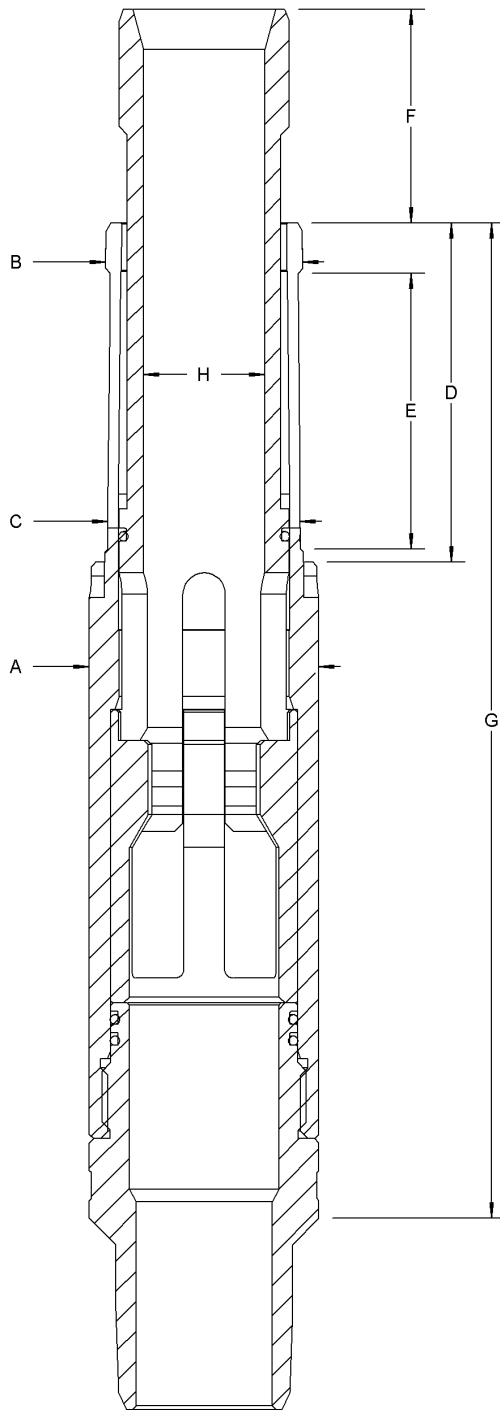
Model 'B' Shifting Tool for use with Mech. Gun Release	
(Selective Keys) Tool Assembly Number	Profile I.D.'s (Shift Up & Shift Down)
WT-031-1625-000	1.645
WT-031-1710-000	1.781
WT-031-1781-000	1.875
WT-031-2313-000	2.250, 2.310
WT-031-2562-000	2.750

Model 'B' Shifting Keys Only (Selective)
WT-031-1625-001
WT-031-1710-001
WT-031-1781-001
WT-031-2313-001
WT-031-2562-001

Assembly Instructions

1. Grease and install O-Rings (items 8) onto the Bottom Sub (item 1) and O-Ring (item 10) onto the Top Sub (item 3). Similarly install O-Ring (item 9) onto the Shifting Sleeve (item 2).
2. Slide the Collet Sub (item 4) into the Top Sub until it shoulders out and the torque tabs on the Top Sub are in the grooves on the Collet Sub.
3. Slide the Shifting Sleeve (item 2) into the Collet Sub; followed by the Release Cage (item 5). The Shifting Sleeve and Collet Sub should slide in easily until the Shifting Sleeve hits the O-Ring in the Top Sub.
4. Thread the Bottom Sub into the Collet Sub. This will move the Shifting Sleeve and Release Cage into the correct position.
5. Apply Blue Loctite® onto the shear screws (item 6) and thread into Collet Sub. The screws will sit above the shoulder on the Collet Sub and will be flush with the OD of the body when fully installed.
6. Install the seal ring (item 7) into the Top Sub.





TC-062			
	2-3/8"	2-7/8"	3-1/2"
A	3.380"	3.693"	4.505"
B*	2.897"	3.202"	4.022"
C	2.830"	3.130"	3.950"
D	5.000"	5.000"	5.000"
E	4.070"	4.094"	4.094"
F	0.995"-3.155"	1.076"-3.184"	1.049"-3.184"
G	14.67"	14.55"	14.75"
H	SLEEVE ID VARIES BASED ON TOOL		

*If the Shifting Sleeve is retracted into the Collet Sub; dimension 'B' increases to:

2-3/8" EU: 2.966"

2-7/8" EU: 3.256"

3-1/2" EU: 4.070"